DOCUMENT RESUME

ED 254 005 EC 171 714

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TITLE Special Educators' Perceptions of Priorities for Computer Use.
SPONS AGENCY Brock Univ., St. Catherines (Ontario).
PUB DATE Nov 84
NOTE 29p.; Research supported by a grant from the College of Education.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Computer Assisted Instruction; Computer Managed Instruction; *Computer Software; Elementary Secondary Education; *Learning Disabilities; *Special Education Teachers; *Teacher Attitudes

ABSTRACT

In an examination of the opinions and needs of special educators regarding computer instructional uses for learning disabled students, 353 teachers, including special education and regular class educators, responded to a questionnaire about concerns and perceptions of computer uses for learning disabled students. Results indicated the continuing need for teacher training in basic computer literacy and noted priorities set by sample teachers for instructional computer use. Highly rated priorities included computer use for drill and practice activities and for increasing motivation to learn, while lower priority was reported for computer uses related to student assessment and evaluation of progress. Comparison with the National Education Association teacher survey were discussed, along with implications for future directions in teacher training. (Author/CL)

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ED254005

Special Educators' Perceptions of Priorities for Computer Use

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This research was supported by a Research and Development grant from Brock University, College of Education

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Abstract

This study examined the opinions and needs of special educators regarding computer instructional uses for learning disabled students. Three hundred and fifty three teachers, including special education and regular class educators, responded to a questionnaire about concerns and perceptions of computer uses for learning disabled students. Results indicated continuing needs for teacher training in basic computer literacy and noted priorities set by sample teachers for instructional computer use. Highly rated priorities included computer use for drill and practice activities and for increasing motivation to learn, while lower priority was reported for computer uses related to student assessment and evaluation of progress. Comparison with the NEA teacher survey were discussed, along with implications for future directions in teacher training.

Much has been written about the extensive range of instructional uses for the computer in education (Becker, 1982; Moser & Carpenter, 1982; White, 1983). While drill/practice and individualized tutorial are the most commonly mentioned, problem solving and thinking skills have also been frequently mentioned obligatory uses, along with computer programming itself. When one considers instructional computer use within special education, similar applications have been recommended as promising supplements to programs for exceptional students (Lindsay & Marini, 1983; Schiffman, Tobin & Buchanan, 1982). Nevertheless, Torgesen and Young (1983) proposed that priorities for computer use would be different for normal achieving and learning disabled children. They argued, based on a well formulated conception of the needs of the learning disabled student, that the first priority for computer use should be practice and skill-building activities in reading and other areas of learning difficulty. Thus, while there are undoubtedly useful computer applications in special education, such as multisensory presentation of content area knowledge and problem solving development, by necessity, the first priority area should be basic reading skill.

While such discussions on instructional computer applications can offer guidelines for effective educational decision making, at issue is the congruence between prescription and practice. Budoff and Hutten (1982) have pointed out hardware and software limitations of much of the CAI applications in special education. The other major consideration in computer implementation, teacher readiness and attitude, has begun to receive attention (Lawton & Gerschner, 1982). Inquiry about teacher perceptions of priorities for computer use will yield information about the degree of congruence between theoretical or

expert prescriptions for computer use and actual implementation. Recently, a National Education Association survey (Norman, 1983) of 1700 teachers noted that only 11% of the sample used computers for instructional purposes. Moreover, the majority of teachers, regardless of computer experience, reported that they were not well informed about any aspect of computers. Nevertheless priorities for computer use varied depending on whether or not teachers used them in the classroom. More teachers who were computer users gave significance to drill/practice and student testing uses than did non users. However, the greatest proportion of teachers in both groups indicated the importance of computer applications for enrichment purposes with high ability students and for simulations to develop general student understanding. Another study (Loop & Christiansen, 1980), composed of regular class teachers who were computer users and those who had no computer familiarity, noted that for both groups the predominant student learning objectives cited were computer literacy, problem solving skill, and specific word processing skills. It would seem in the case of regular class teachers, priorities for computer use are influenced by both hardware/software capability and perception of predominant student needs. Thus, high practice/drill and student testing priorities among teachers who were computer users may have reflected availability of such software, while overall preferences for enrichment, simulation, and problem solving activities may have reflected the dominant student learning profile for those regular class teachers surveyed. If teacher experience with computers, as well as student composition, influence priorities, one would expect to see a shift in priorities for computer use set by special educators in comparison to those set by regular educators. For teachers whose major responsibility

is the education of learning disabled students, priorities for computer support in remedial activities would be expected to be observed. Since few surveys of special educators have been conducted (Vensel, 1981) to investigate choices for use of computers, the present study focussed on priorities set by teachers in the context of consideration of needs of the learning disabled student.

Objectives for the present investigation included assessing the extent of computer use by selected special education teachers, identifying teacher perceptions of needs for training and priorities for computer instructional applications within the special education context.

Method

Sample

Teachers enrolled in additional qualifications university courses in Special Education during the 1983-84 school year participated. Courses were offered to twelve school boards in the urban-suburban Niagara and Hamilton regions of southern Ontario, Canada. Questionnaires were distributed to intact classes by the author or an assistant who explained the nature of the questionnaire and offered assistance in completing the form. Participation, which was voluntary and completed during class time, was accepted by all students. Sample characteristics of interest included sex, years of teaching experience, special education experience, and background knowledge of computers. Table 1 summarizes these characteristics for two identified subgroups. A Regular Class group consisted of 165 teachers who, while taking additional qualifications courses in special education, had no special education teaching

Insert Table 1 here

experience. The Special Education group consisted of 188 teachers who had at least one year of special education teaching experience.

With respect to sex, experience, school level and geographic region, the present sample compared favorably with the National Education Association survey of teachers (Norman, 1983). Proportional composition was similar across these variables for both studies, giving further weight to the assumption that the present sample was a representative one.

The Questionnaire

Preliminary questions concerning respondent background and computer use in the form of 17 check-off items constituted the first section of the questionnaire (Appendix). There followed 13 items on attitudes or concerns about computer use for instructional purposes, based on a five-point agree-disagree scale, with one value for "no opinion". These items stated opinions about an overemphasis on computer education, teacher training needs, problems of access, and adequacy of computer facilities. Teachers then rated eight computer functions on a five-point scale from very important to unimportant. The eight functions were selected from uses categorized by Becker (1982) and noted by others (Norman, 1983). Eight instructional uses, presented in a different order, were also rated on the basis of projected frequency of use on the classroom on a five point scale from never to fre-

quently. Finally the eight computer applications were ranked in priority from highest (1) to lowest (8).

Results

A series of chi square analyses were performed for subgroups differentiated by special education teaching experience (yes/no), grade level (elementary/secondary), overall teaching experience (new/experienced), and experience with computers (use in school or class). There were no differences noted based on grade level or overall teaching experience. There were some differences noted based on special education teaching experience and whether or not one actually used a computer for instructional purposes. These data were presented as percentages with special education experience as the major subgroup distinction, and user differences noted where appropriate. The four point values of scales have been collapsed to two for simplified reporting. The fifth value, no opinion, is shown, however.

Computer Use

Information on the extent of computer use and background knowledge is summarized in Table 2. The two groups were quite similar in the amount of formal training received as well as

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Insert Table 2 Here

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percentage owning computers and having access to them either in school or in the classroom. In comparing the present sample to the 1982 NEA survey, one notes that the percentage of teachers who own computers and who use them in schools has doubled. Perhaps more significant, where the NEA survey had reported that 79% of

teachers had no computer training, approximately half that number in the present sample reported no computer familiarity. Nevertheless, from inspection of Table 3, the majority of both groups rated their background as inadequate and would make more

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Insert Table 3 here

---

use of computers for instruction if it were not for their lack of knowledge. In evaluating other impediments to computer use, significant differences between the two groups were noted. Of those who expressed opinions, more special education teachers disagreed that other program time commitments prevented their using computers. Rather they were more apt to credit hardware or software inadequacies for not using computers in instruction. Finally, more special education teachers rated school board assistance as inadequate in encouraging classroom computer use.

Computers for Learning Disabled (LD) Students

No group differences were noted on opinions about computer assisted instruction for students with learning difficulties. As can be seen from Table 4, while most teachers disagreed that

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Insert Table 4 Here

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there is an overemphasis on computer literacy at present, there was a large minority who felt that learning disabled students have other pressing learning needs. A majority of teachers agreed

that a primary use with LD students is motivation and remedial assistance. A large majority of both groups of teachers supported the need for basic computer programming skills among special education teachers. Finally, half of all teachers felt unable to respond to the item asking for an evaluation of software from the perspective of LD students.

Priorities for Instructional Computer Use

The majority of all teachers reported that they would use all of the computer applications listed in Table 5 at least sometimes. The most frequently cited computer use was drill and

Insert Table 5 Here

practice, followed by word processing and general problem solving skill development. Using the computer as an incentive or motivator was also frequently mentioned, as was programming for LD students, although both of these were considered less frequently than practice and word processing functions. Teachers listed evaluation and testing functions least frequently, although these were still considered by a majority of teachers.

When teachers were asked to rank eight applications from highest (1) to lowest (8) priority, some shifts in importance occurred. Table 6 reports collapsed percentage rankings for 1-2, 3-4, 7-8 positions. Ranks for 5-6 position were not considered for this discussion. When forced to set priorities, the motivational

Insert Table 6 Here

aspect was dominant, followed by drill and practice activities in basic skill areas. Nevertheless experienced special educaton

teachers gave significantly less priority to computer drill activities (X^2 = 10.86, df = 4, $p < .05$) than did those with no such teaching experience. General problem solving skills and word processing as a student self management skill vied for third ranking, but more teachers also rated self management skills via computer as the lowest priority in considering alternative choices. The ranking of programming skill was noteworthy. While programming had been earlier projected as a frequent use by teachers, it was given less priority than uses for acquisition of content area knowledge or word processing. Finally, diagnostic assessment, evaluation and using computers as information sources were seen as lowest priority uses.

Perceptions of Teachers Who Are Computer Users

By and large, few differences were noted based on actual computer use in the classroom (N = 43). One difference occurred for this group with respect to priorities set for diagnostic testing and evaluation applications (X^2 = 10.82, df = 4, $p < .05$). More users (49%) listed this as a last priority than did non users (34%).

The other area of significant difference was perception of adequacy of resources to implement computer use in the classroom. More users than nonusers considered their knowledge, hardware, and software resources adequate for implementing computer use in the classroom (X^2 = 30.43, 22.05, 35.13 respectively; df = 2, $p < .001$). As well more users rated school board support and assistance as adequate compared to nonusers (X^2 = 7.64, df = 2, $p < .05$).

Discussion

In considering the minor differences between regular and special education teachers in this study, that regular teachers were enrolled in special education courses may have been a factor influencing their perceptions of computer applications for learning disabled students. Nevertheless teacher responses suggested that actual special education teaching experience was related to concerns about limitations in implementing computer use in classrooms. Teachers without special education experience perceived greater difficulty in scheduling instructional computer use for special education programs, than did experienced special educators who saw lack of hardware/software resources and availability of consultation as greater impediments.

In contrast to the earlier NEA survey (Norman, 1983), where computer use for remedial assistance was a relatively low priority among regular teachers, special educators identified drill and practice functions high on their list, along with using the computer as a motivator for difficult learning. Thus, the computer focus which placed primary emphasis on the particular needs of the learning disabled student (Torgesen & Young, 1983) appeared to be supported by practioners and those educators preparing for roles in special education. Consequently, the merits of other computer uses such as programming, student assessment and evaluation of student progress may take on a lower priority than for regular class teachers. Implications for teacher training suggest that computer literacy courses should be tailored to targeted student populations, in allocating computer topics. While drill and practice has been regarded as a low level of instructional computer use (Becker, 1982), it may deserve greater attention in training for special educators, in terms of software availability and

teacher production of software for remedial purposes.

The overall level of computer literacy among teachers must be addressed. Actual classroom computer use by special educators remained low (13.8%), not much changed from the 11.2% figure found in the NEA survey (Norman, 1983). Although introductory familiarity with computers seems to have increased, a large majority of teachers continued to regard their level of computer knowledge as inadequate. Further evidence of this was the high rate of no opinion (50%) on the item evaluating reading demands of software for learning disabled students. When teachers have no knowledge of how the computer can access other independent sources of information, the importance of this function for learning disabled students is affected. If the range of uses to which computers can be applied in educating exceptional students is to be realized (White, 1983), more detailed elaboration of these uses is required for particular audiences of special educators.

Finally, teacher responses indicated a cautious appreciation for the role of computers in instruction and a willingness to take on responsibilities involved in implementing their use. A large majority agreed that special educators should have basic computer programming skills in order to use computers effectively. On the other hand in considering learning disabled students, a large minority felt that these students have other more critical learning needs, so that computer skill as a learning objective must be judged in relation to those other needs. Based on the results of the present study, much needs to be done in making the technology and the knowledge available to teachers who seem well able to appreciate the promise it holds for learning disabled students.

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Table 1

Characteristics of Teachers Enrolled in Special Education Courses by Teaching Experience

	Regular	Special Education
Sex		
Male	38 (23.2)	60 (31.9)
Female	127 (76.8)	128 (68.1)
Total Teaching Experience		
0-2 yrs.	47 (28.3)	19 (10.1)
3-5 yrs.	14 (8.7)	40 (21.3)
6 + yrs.	104 (63.0)	129 (68.6)
School Level		
Elementary	122 (73.9)	114 (60.6)
Senior/High School	23 (13.8)	56 (29.8)
None	20 (12.3)	18 (9.6)

Table 2

Teacher Computer Use and Training

	Regular	Special Education
Own a Computer		
Yes	23 (13.8)	21 (11.2)
No	142 (86.2)	167 (88.8)
Use One in School		
Yes	39 (23.9)	51 (27.1)
No	126 (76.1)	137 (72.9)
Computer in Class		
Yes	20 (12.3)	26 (13.8)
No	145 (87.7)	162 (86.2)
Computer Background		
No knowledge or experience	67 (40.6)	60 (31.9)
Some familiarity	74 (44.9)	95 (50.5)
Computer Literacy Workshop	39 (23.9)	33 (17.6)
Computer Course	26 (15.9)	25 (13.3)

Table 3

Teacher Perceptions of Computer Needs

	Regular	Special Education
Self rating of Computer Knowledge		
Adequate	61 (37.0)	63 (33.5)
Inadequate	94 (57.2)	119 (63.3)
No opinion	10 (5.8)	6 (3.2)
Would make more use of computers but-Lack knowledge		
Agree Strongly	102 (61.6)	128 (68.1)
Disagree	38 (23.2)	40 (21.3)
No opinion	25 (15.2)	20 (10.6)
Not enough Time to fit into my program (1)		
Agree	54 (32.6)	60 (31.9)
Disagree	67 (40.6)	101 (53.7)
No Opinion	44 (26.8)	27 (14.4)
Lack Adequate Resources-Hardware (2)		
Agree	83 (50.3)	118 (62.8)
Disagree	31 (18.8)	39 (20.7)
No Opinion	51 (30.9)	31 (16.5)
Lack Adequate Resources-Software (3)		
Agree	92 (55.8)	123 (65.4)
Disagree	26 (15.9)	37 (19.7)
No Opinion	47 (28.3)	28 (14.9)
Availability of School Consultation		
Adequate (4)	65 (39.1)	82 (43.6)
Inadequate	51 (31.2)	81 (43.1)
No Opinion	49 (29.7)	25 (13.3)

(1) $X^2 = 9.15$, df = 2, p. < .01

(2) $X^2 = 9.95$, df = 2, p. < .01

(3) $X^2 = 8.74$, df = 2, p. < .02

(4) $X^2 = 13.95$, df = 2, p. < .001

Table 4

Views on Computer Use for LD Students

	Regular	Special Education
Overemphasis on Computer Literacy		
Agree	24 (14.5)	22 (11.7)
Disagree	81 (49.3)	105 (55.9)
No Opinion	60 (36.2)	61 (32.4)
LD students have other more critical learning needs than computer skill development		
Agree	69 (42.1)	68 (36.2)
Disagree	79 (47.8)	109 (58.0)
No Opinion	17 (10.1)	11 (5.9)
Available software inadequate for LD because of heavy reading demands		
Agree	50 (30.4)	60 (31.9)
Disagree	30 (18.1)	35 (18.6)
No Opinion	85 (51.4)	93 (49.5)
Computers use primarily to make difficult learning fun		
Agree	112 (68.1)	137 (72.9)
Disagree	41 (24.6)	46 (24.5)
No Opinion	12 (7.2)	5 (2.7)
Begin Computer education in high school		
Agree	72 (43.5)	90 (47.9)
Disagree	74 (44.9)	84 (44.7)
No Opinion	19 (11.6)	14 (7.4)
At the elementary level computer use mainly for remedial assistance		
Agree	102 (61.6)	111 (59.0)
Disagree	51 (31.2)	68 (36.2)
No Opinion	12 (7.2)	9 (4.8)
Special education teachers need basic computer programming skills		
Agree	141 (85.5)	161 (85.6)
Disagree	19 (11.6)	22 (11.7)
No Opinion	5 (2.9)	5 (2.7)

Table 5

Teacher Estimates of Frequency of Use for Computer Applications

	Regular	Special Education
Drill and practice in basics		
Sometimes/Frequent	143 (87.0)	161 (85.6)
Seldom/Never	4 (2.2)	13 (6.9)
Evaluating Student Progress		
Sometimes/Frequently	97 (58.7)	114 (60.6)
Seldom/Never	47 (28.3)	48 (25.5)
Word Processing		
Sometimes/Frequently	140 (84.8)	152 (80.9)
Seldom/Never	11 (6.5)	15 (8.0)
Motivator - Reward		
Sometimes/Frequently	130 (79.0)	140 (74.5)
Seldom/Never	25 (15.2)	37 (19.7)
Diagnostic Testing		
Sometimes/Frequently	91 (55.1)	119 (63.3)
Seldom/Never	41 (24.6)	39 (20.7)
Learning to Program		
Sometimes/Frequently	115 (19.6)	142 (75.5)
Seldom/Never	29 (17.4)	25 (13.3)
Problem Solving		
Sometimes/Frequently	137 (83.3)	147 (78.2)
Seldom/Never	11 (6.5)	23 (12.2)

Table 6

Percentage Teacher Rankings of Priorities for Computer Applications in Special Education

	Regular	Special Education
Incentive/Reward		
First-Second	72.9	72.9
Third-Fourth	15.9	13.3
Seventh-Last	6.5	2.1
Drill/Practice		
First-Second	60.9	50.9
Third-Fourth	24.0	23.0
Seventh-Last	.7	6.9
General Problem Solving		
First-Second	16.7	21.8
Third-Fourth	46.8	41.0
Seventh-Last	4.3	4.8
Student Self Management of Learning (Records, Word Processing, etc.)		
First-Second	8.0	5.3
Third-Fourth	46.0	54.0
Seventh-Last	35.5	37.8
Content Area Knowledge		
First-Second	10.1	6.9
Third-Fourth	30.4	29.3
Seventh-last	18.1	25.0
Programming Skills		
First-Second	8.0	9.6
Third-Fourth	19.6	25.6
Seventh-Last	34.8	22.3
Diagnostic Assessment and Evaluation		
First-Second	13.0	13.8
Third-Fourth	16.0	22.0
Seventh-Last	34.1	36.7
Computer as an Information Source		
First-Second	2.9	5.9
Third-Fourth	13.0	9.6
Seventh-Last	55.1	50.5

Appendix

Teacher Survey on Computer Use

Return Questionnaire to:

Dr. Adele Thomas
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(416) 688-5550, Ext. 340

Background Information:

Please check off each item as it applies to you.

Male _____ Female _____

B.Ed. (or B.A.) Yes _____ No _____

M.Ed. (or M.A.) Yes _____ No _____

Ministry Courses completed

Special Education: Part 1 _____ Part 2 _____ Part 3 _____

Reading: Part 1 _____ Part 2 _____ Part 3 _____

Ministry Courses in Progress

Special Education Part 1 _____ Part 2 _____ Part 3 _____

Reading: Part 1 _____ Part 2 _____ Part 3 _____

Other Special Education Courses completed or in progress. Please list.

_____ _____

_____ _____

_____ _____

_____ _____

Currently Employed in Teaching

Full time: Yes _____ No _____

Part time: Yes _____ No _____

Other: _____

Current Position ('82 - '83)

Primary _____ Junior _____

Intermediate _____ Senior/Secondary _____

Type of Position (Current)

Special Education teacher, segregated class (Indicate type of class--OPP, TMR, SLD, etc.) _____ _____

Regular class teacher _____

Resource/Withdrawal Teacher _____

Teacher Diagnostician _____

Other (Please indicate) _____

Number of years in current position

0 - 2 _____ 3 - 5 _____ 6 - 10 _____ 11+ _____

Will your position change in '83 -'84?

Yes _____ No _____

What will it be?

Grade/Role _____

Total number of years of teaching experience.

0 - 2 _____ 3 - 5 _____ 6 - 10 _____ 11 - 15 _____ 16+ _____

Total number of years of Special Education teaching experience.

None _____ 1 - 2 _____ 3 - 5 _____ 6 - 10 _____ 11+ _____

Please check as many of the following as apply to you.

_____ No background knowledge or experience with computers.

_____ Informal knowledge/experience. "Play" with the computer at home/school and can use packaged software such as games.

_____ Registered and completed the TVO Academy, Bits + Bytes Series.

_____ Watched about half of the TVO series.

_____ Have taken a computer literacy workshop.

_____ Have taken a basic computer education course (Ministry or the like).

Do you own a microcomputer?

Yes _____ No _____

Do you currently use a microcomputer in your teaching program or position?

Yes _____ No _____

What brand/type of microcomputer do you use?

At home _____

At school _____

I have _____ do not have _____ a computer in my classroom.

Do you think that students and teachers at your school have sufficient access to computers?

Yes _____ No _____

Please describe briefly the reasons for your answer. _____

_____

_____

_____

For each item below, circle your choice according to the following scale:

Agree Strongly	Agree Somewhat	Disagree Somewhat	Disagree Strongly	Can't Say
1	2	3	4	5

There is too much concern over computer literacy for learning disabled/ underachieving students.

1 2 3 4 5

Children with learning problems have other more critical learning needs than computer skill development.

1 2 3 4 5

The main advantage to using computers with learning disabled children is to make difficult learning fun.

1 2 3 4 5

Computer education should be begun for learning disabled/underachieving students at the secondary level as part of vocational education.

1 2 3 4 5

At the elementary school level, computer use for learning disabled/underachieving students should concentrate mainly on assisting in remedial activities and programming.

1 2 3 4 5

Special Education teachers will need basic computer programming skills in order to use computers effectively in their Special Education programs.

1 2 3 4 5

I would like to make more use of the computer in my classroom but I lack adequate knowledge of computers.

1 2 3 4 5

I would like to make more use of the computer in my classroom but I don't have enough time in my program.

1 2 3 4 5

I would like to make more use of the computer in my classroom but I don't have adequate resources in terms of software.

1 2 3 4 5

I would like to make more use of the computer in my classroom but I don't have adequate resources in terms of hardware.

1 2 3 4 5

I have found that most software (commercial programs) is of limited value for students with reading problems because of heavy demands for independent reading as part of instructions or general program format.

1 2 3 4 5

Please identify your point of view based on the following scale:

Quite Adequate	Adequate Enough	Somewhat Adequate	In-adequate	Can't Say
1	2	3	4	5

For my purposes for classroom use, I consider my knowledge/experience with microcomputers

1 2 3 4 5

The availability in my Board of assistance/consultation to help me develop ideas for computer use in the classroom is

1 2 3 4 5

On a scale of 1 (never) to 5 (frequently) please rate how you use or would use the computer in teaching special education.

Drill and practice activities in basic skills.

Never	Seldom	Sometimes	Frequently	Can't Say
1	2	3	4	5

Reporting-Summarizing aspects of student progress.

1	2	3	4	5

A word processor for writing/language arts activities.

1	2	3	4	5

As a motivating or fun activity with variety of computer games. In this case there is no particular learning objective planned or skill monitored.

1	2	3	4	5

Diagnostic testing and assessment of learning needs in language arts.

1	2	3	4	5

Diagnostic testing and assessment of learning needs in mathematics.

1	2	3	4	5

Learning to program. Teaching students how to make computers carry out different sets of instructions.

1	2	3	4	5

To teach general attentional, planning, problem-solving skills as targeted and monitored learning objectives.

1	2	3	4	5

Please list (up to 3 in each category) software which I use and rate highly

Name/or Type Comment

_____

_____

_____

Software I do not recommend

Name/or Type Comment

_____

_____

_____

When I consider my own professional development needs in the area of computers in the classroom, three areas of priority for me would be

_____

_____

_____

When considering the following general statements about the use of computers in teaching learning disabled/underachieving students, please rate each of the following according to the importance they would have or do have in your program.

Use the rating scale as follows:

Very Important	Of Some Importance	Of Little Importance	Un-important	Can't Say
1	2	3	4	5

Computer use:

For diagnostic testing and assessment of individual learning needs.

1 2 3 4 5

To provide practice in basic skills in reading and computational operations.

1 2 3 4 5

To develop self confidence and motivation to learn.

1 2 3 4 5

To teach programming skills.

1 2 3 4 5

To provide content knowledge through curriculum-related software.

1 2 3 4 5

To teach general problem solving skills.

1 2 3 4 5

To provide student access to other information networks.

1 2 3 4 5

To teach student self management of learning in homework, writing, etc.

1 2 3 4 5

From your perspective, please rank the eight functions of computers in Special Education listed below, from the top priority (1) to the least priority (8).

_____ Individual diagnostic assessment of learning needs.

_____ Practice in basic skills.

_____ Incentive and motivator for learning.

_____ To use basic programming skills.

_____ To provide content knowledge through curriculum-related software.

_____ To develop general problem solving skills.

_____ Access to other information networks.

_____ Assist students in self-management of learning--record keeping, homework, etc.